UNIVERSITY OF NIŠ

Course Unit Descriptor	Faculty	Faculty of Mechanical Engineering

GENERAL INFORMATION	
Study Program	Mechanical Engineering
Study Module (if applicable)	-
Course Title	Optimization in mechanical design
Level of Study	☐ Bachelor ☐ Master's ☒ Doctoral
Type of Course	☐ Obligatory ☒ Elective
Semester	☐ Autumn ☒ Spring
Year of Study	I
Number of ECTS Allocated	10
Name of Lecturer/Lecturers	Anđelković R. Boban, Jelena D. Stefanović-Marinović
Teaching Mode	☐ Lectures ☐ Group tutorials ☒ Individual tutorials ☐ Laboratory work ☒ Project work ☐ Seminar ☐ Distance learning ☐ Blended learning ☐ Other

Purpose and Overview (max. 5 sentences)

Introducing the basic concepts of mathematical optimization and advantages of optimal solution application, as well as possibilities of mathematical optimization application to actual mechanical design.

Syllabus (brief outline and summary of topics, max. 10 sentences)

Defining of the optimization task. A mathematical model of optimization. Methods for mathematical optimization. The classification of mathematical methods according to various criteria. General characteristics and application of specific optimization methods. Practical application of optimization methods and techniques using software packages. Application to specific optimization problems of mechanical systems. Application of MatLab packages for optimization. Multi-criteria optimization. Selection of criteria for optimization. Methods for solving problems of multi-criteria optimization. The principles of optimization of mechanical power transmissions. Selection of criteria and methods for optimization.

Language of Instruction

☒Serbian (complete course) ☐ English (complete course) ☐ Other _____ (complete course)

☐Serbian with English mentoring ☐Serbian with other mentoring _____

Assessment Methods and Criteria

Pre exam Duties	Points	Final Exam	Points
Activity During Lectures	0	Written Examination	0
Practical Teaching	0	Oral Examination	50
Teaching Colloquia	50	Overall Sum	100

***Final examination mark is formed in accordance with the Institutional documents**